

Polycom Video Communications

H.239 People+Content™ - Polycom Patented Technology

Author:
Dave Lambert

June 20, 2004



Connect. Any Way You Want.

What is H.239?

ITU-T Recommendation H.239 is the international standard for the use, control, and labeling of two simultaneous channels of video in a single video conference. Approved in July of 2003 by the ITU-T in Geneva, H.239 enables multi-vendor interoperable conferences on both ISDN (H.320) and IP (H.323) networks.

The H.239 standard is based on a simplified version of Polycom's patented "People+Content" feature, which has been offered since 2000. In order to promote the interoperability of video conferencing equipment from all manufacturers, Polycom offered through the ITU-T a free license to its technology (US patent number 6,704,769) to all users of H.239 around the world.

In People+Content, the "People" video channel carries a live view of the people in the conference, while the "Content" channel shows meeting content, such as slides, spreadsheets, or other presentation material - anything that can be developed and displayed from a standard PC. Viewers can see both the content of the presentation while maintaining the view of the presenter (or other people) at the same time. Further aspects of the P+C feature on the VSX™ product line include the ability to input and display content at native graphics resolutions (up to SXGA input and XGA display) as well as natural user interfaces that allow meeting content to flow naturally in any conferencing application.

Although some existing standards, like H.323, have always supported multiple channels of video, H.239 adds the critical ability to "label" the role of each channel in the conference. In H.239 each video channel gets a "role label" which indicates both the purpose of the channel and how each channel should be presented to the viewer. The H.239 role labels are **Live** and **Presentation**.

In addition, H.239 also provides facilities for conferencing equipment to manage video channel bitrates (the flow Control Release Request message), to manage tokens for the Presentation role, and to automatically determine the capabilities of the various equipment used in the conference.

Annex A of H.239 provides a standardized and generic automatic mechanism to translate control messages between H.320 systems (on ISDN) and H.323 systems (on IP), so that video systems on diverse networks can join together in a single conference. This translation system is used not only by H.239, but is taken advantage of also by other new standards, such as H.241.

Finally, Annex B of H.239 extends the H.320 standard to support a second video channel (called the Additional Media Channel, "AMC").

How does it work?

As each terminal supporting H.239 connects to a video conference, it indicates to the other equipment its capability to handle the signaling in H.239, which channel roles it supports, and in the case of H.320 systems on ISDN, which video bitrates are supported for the second video channel.

During the conference, messages are exchanged to open and close video channels, manage the bitrate of each channel, and to indicate which role each channel plays in the conference. These role labels enable receivers to send each channel to the best display for each type of video content. Tokens are used to control which site is presenting at the moment. If there is a mix of IP and ISDN sites, bridges and gateways use the procedures in Annex A of H.239 to translate the messages between the network types.

How was H.239 developed?

A team of Polycom human factors user interface experts, and video conferencing engineers developed the concepts behind "People+Content" in the late 1990s through 2000, and filed the patent application "Media role management in a video conferencing network" in April of 2000. This would eventually issue as Polycom's US patent 6,704,769. Later that year, the first implementation of People+Content (on the iPower™ product line) was offered to customers.

Soon other firms began to offer competing and incompatible dual channel video features, without the role management features of People+Content. By the end of 2001, at least three different incompatible systems were in the market from various suppliers.

Since the purpose of conferencing equipment is to enable convenient and effective communications between users at different sites, these incompatibilities did not serve users well. In order to ensure that users could get the full benefit of People+Content, Polycom decided in 2002 to offer licenses to its patented technology to competitors on royalty-free terms.

H.239 Role label	Use
Live	<p>For live video of people in the conference. (Similar to Polycom's "People" channel.)</p> <p>Usually favors frame rate (for smooth motion) over small details. Usually displayed on television monitors.</p>
Presentation	<p>For presentation video such as slides, spreadsheets, documents, etc.(Similar to Polycom's "Content" channel.)</p> <p>Token-controlled so that a single presentation is distributed to all parties in the conference.</p> <p>Usually favors high resolution (for fine details) over frame rate. Usually displayed on computer monitors or projectors.</p>

This opening led in February 2003 to a multi-vendor proposal to create an open international standard to extend the ITU-T H.32x series for dual video channel conferencing, based on Polycom's technology.

The proposal was accepted by the industry representatives in ITU-T, and Polycom's Dave Lindbergh was appointed editor of the new standard. After multi-company work in ITU-T, the final draft of H.239 was ready in May, and was formally approved by ITU-T in July of 2003.

The Polycom Office™

With integrated video, audio, data, and Web capabilities, The Polycom Office is the only solution that offers an easy way to connect, conference, and collaborate any way you want. Work faster, smarter, and better with The Polycom Office.

Polycom, Inc. develops, manufactures and markets a full range of high-quality, easy-to-use and affordable voice and video communication endpoints, video management software, web collaboration software, multi-network gateways, and multi-point conferencing and network access solutions. Its fully integrated end-to-end solution, The Polycom Office, is supported by the Polycom accelerated communications architecture and enables business users to immediately realize the benefits of integrated video, voice data and web collaboration over rapidly growing converged networks.



Polycom Headquarters:

4750 Willow Road, Pleasanton, CA 94588 (T) 1.800.POLYCOM (765.9266) for North America only.
For North America, Latin America and Caribbean (T) +1.925.924.6000, (F) +1.925.924.6100

Polycom EMEA:

270 Bath Road, Slough, Berkshire SL1 4DX, (T) +44 (0)1753 723000, (F) +44 (0)1753 723010

Polycom Asia Pacific:

Polycom Hong Kong Ltd., Rm 1101 MassMutual Tower, 38 Gloucester Road, Wanchai, Hong Kong, (T) +852.2861.3113, (F)+852.2866.8028

©2004 Polycom, Inc. All rights reserved.

Polycom and the Polycom logo are registered trademarks and VSX, People+Content, iPower and The Polycom Office are trademarks of Polycom in the U.S. and various countries. All other trademarks are the property of their respective owners. Specifications subject to change without notice.

Rev 7/04